

What is claimed is:

1. A crystalline ceramic dental mill blank having a Contrast Ratio value less than about 0.7.
- 5 2. The mill blank of claim 1 wherein the ceramic is a single crystal.
3. The mill blank of claim 1 wherein the ceramic is polycrystalline.
4. The mill blank of claim 3 wherein the ceramic is single-phase crystalline.
5. The mill blank of claim 3 wherein the ceramic is multi-phase crystalline.
6. The mill blank of claim 1 wherein the blank has a tooth-like shade.
- 10 7. The mill blank of claim 1 wherein the ceramic is aluminum oxide.
8. The mill blank of claim 1 wherein the ceramic is selected from the group consisting of magnesium-aluminum spinel, zirconium oxide, yttrium aluminum garnet, zirconium silicate, yttrium oxide and mullite.
9. The mill blank of claim 1 wherein the blank has a Contrast Ratio value less than about 0.6.
- 15 10. The mill blank of claim 1 wherein the blank has a Contrast Ratio value less than about 0.5.
11. The mill blank of claim 1 wherein the blank, after milling into a Flexural Strength test sample, has a flexural strength greater than about 250MPa.
- 20 12. The mill blank of claim 1 wherein the blank, after milling into a Flexural Strength test sample, has a flexural strength greater than about 350MPa.
13. The mill blank of claim 1 wherein the blank, after milling into a Flexural Strength test sample, has a flexural strength greater than about 500MPa.
- 25 14. The mill blank of claim 1 wherein the ceramic comprises less than about 5wt% glass.

15. The mill blank of claim 1 wherein the ceramic comprises less than about 2 wt% glass.

16. The mill blank of claim 1 wherein the ceramic is essentially free of oxynitride.

17. The mill blank of claim 1 wherein the blank includes a support stub.

18. A dental mill blank comprising at least 99% polycrystalline ceramic having at least 99% theoretical density and a Contrast Ratio value of less than about 0.7, wherein the blank, after milling into a Flexural Strength test sample, has a flexural strength greater than about 250MPa.

19. The blank of claim 18 wherein the ceramic is selected from the group consisting of aluminum oxide, yttrium oxide, yttria-alumina garnet, and magnesium-aluminum spinel.

20. A method for making a dental prosthesis comprising the steps of:

- a) providing a dental mill blank comprising crystalline ceramic having a Contrast Ratio less than about 0.7; and
- b) carving the mill blank into a desired shape.

21. The method of claim 20 wherein the ceramic has a Contrast Ratio less than about 0.6.

22. The method of claim 20 wherein the ceramic has a Contrast Ratio less than about 0.5.

23. The method of claim 20 wherein the carved mill blank has a flexural strength greater than about 250 MPa.

24. The method of claim 20 wherein the carved mill blank has a flexural strength greater than about 350MPa.

25. The method of claim 20 wherein the carved mill blank has a flexural strength greater than about 500 MPa.

26. The method of claim 20 wherein the mill blank is carved into the desired shape in less than about 3 hours.

27. The method of claim 20 wherein the mill blank is carved into the desired shape in less than about 2 hours.

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28. The method of claim 20 wherein the mill blank is carved into the desired shape in less than about 1 hour.

29. The method of claim 20 further comprising the step of:

c) adding additional material to the carved blank.

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31. The method of claim 20 further comprising the steps of:

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c) manually changing the shape of the carved blank and

d) finishing the outer surface of the carved blank.

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32. The method of claim 20 wherein the carving is performed by a milling machine.

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33. The method of claim 20 wherein the carving is performed by a hand-held instrument.

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34. A method for using a dental prosthesis comprising the steps of:

a) providing a dental mill blank comprising crystalline ceramic having a Contrast Ratio less than about 0.7;

b) carving the mill blank into a desired shape; and

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c) attaching the carved blank to tooth or bone structure.

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35. The method of claim 34, wherein the carved blank is attached to the tooth or bone structure with a color-matching bonding agent.

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36. The method of claim 34 further comprising an interim step of:

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a) applying a color-matching composition onto a the tooth or bone structure prior to placing the carved blank onto the tooth structure.

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37. A multiple-unit kit comprising a crystalline ceramic dental mill blank having a Contrast Ratio less than about 0.7 and instructions for using the mill blank.

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38. The kit of claim 37 further comprising a color-matching composition suitable for use in the oral environment.

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39. The kit of claim 37 further comprising a bonding agent.

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40. The kit of claim 37 further comprising a milling lubricant.

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41. A crystalline ceramic dental prosthesis having a Contrast Ratio value less than about 0.7.

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42. The prosthesis of claim 41 wherein the ceramic is a single crystal.

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43. The prosthesis of claim 41 wherein the ceramic is polycrystalline.

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44. The prosthesis of claim 41 wherein the ceramic is single-phase crystalline.

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45. The prosthesis of claim 41 wherein the ceramic is multi-phase crystalline.

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46. The prosthesis of claim 41 wherein the ceramic is selected from the group consisting of aluminum oxide, magnesium-aluminum spinel, zirconium oxide, yttrium aluminum garnet, zirconium silicate, yttrium oxide and mullite.

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47. The prosthesis of claim 41 having a flexural strength greater than about 250MPa.

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48. The prosthesis of claim 41 wherein the ceramic comprises less than about 5wt% glass.

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49. The prosthesis of claim 41 wherein the ceramic is essentially free of oxynitride.

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